REMARKS

Claims 8-14 and 21-22 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Chen (U.S. Patent Number 5,751,725) in view of Jacobs et al. (U.S. Patent Number 5,414,796, hereinafter "Jacobs"). The Examiner's thoughtful and thorough reply in the *Response to Arguments* section of the present office action is appreciated; however, the applicants respectfully disagree with the Examiner's rejections and request reconsideration.

As asserted in their previous responses, the applicants submit that neither Chen nor Jacobs teach or suggest modifying a filter state based on the validity of the frame rate determination. Independent claim 9 recites (emphasis added) "decoding the first frame according to the first frame rate to produce a speech decoder filter state;...determining, based on the second frame rate, if the first frame rate was in error to produce an error determination; **updating the speech decoder filter state based on the error determination** to produce an updated speech decoder filter state; decoding the second frame using the updated speech decoder filter state." Thus, to paraphrase, the speech decoder filter state results from decoding the first frame and is updated based on the frame rate error determination before being used to decode the second frame.

The Examiner asserts that "Jacobs teaches that pitch filter and codebook excitation parameters depend on a data transmission rate," citing col. 7, lines 33-36. Jacobs column 7, lines 33-65 reads (emphasis added):

> **Depending upon the data transmission rate, searches are performed to compute the pitch filter and codebook excitation parameters multiple times on different subframes of data frame 10** as shown in FIGS. 1b-1e. It should be understood that in the preferred embodiment that only one rate is selected for frame 10 such that the pitch and codebook searches are done in various size subframes corresponding to the selected rate as described below. However for purposes of illustration, the subframe structure of the pitch and codebook searches for the various allowed rates of the preferred embodiment for frame 10 are shown in FIGS. 1b-1e.
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> At all rates, there is one LPC computation per frame 10 as illustrated in FIG. 1a. As illustrated in FIG. 1b, at full rate there are two codebook subframes 18 for each pitch

> subframe 16. **At full rate there are four pitch updates**, one for each of the four pitch subframes 16, each 40 samples long (5 msec.). Furthermore **at full rate there are eight codebook updates**, one for each of the eight codebook subframes 18, each 20 samples long (2.5 msec.).
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> **At half rate**, as illustrated in FIG. 1c, there are two codebook subframes 22 for each pitch subframe 20. **Pitch is updated twice, once for each of the two pitch frames 20 while the codebook is updated four times, once for each of the four codebook subframe 22. At quarter rate**, as illustrated in FIG. 1d, there are two codebook subframes 26 for the single pitch subframe 20. **Pitch is updated once for pitch subframe 24 while the codebook twice, once for each of the two codebook subframe 26.** As illustrated in FIG. 1e, at eighth rate, pitch is not determined and the codebook is updated only once in frame 28 which corresponds to frame 10.

The Examiner asserts that "in the case of Chen if a value of a previous frame rate was determined to be incorrect, the new and correct different frame rate would require different pitch filter and code excitation parameters (updated parameters) as per the teachings of Jacobs." However, the applicants submit that Jacobs, as cited by the Examiner, does not teach that pitch filter and codebook excitation parameters depend on a data transmission rate.

Rather, the applicants submit that Jacobs teaches that, depending upon the data transmission rate, searches are performed to compute the pitch filter and codebook excitation parameters multiple times on different subframes, where the data transmission rate determines how many parameter updates will occur for each data frame. Thus, Jacobs teaches that the number of times per data frame that pitch filter and codebook excitation parameters are updated depends on the data transmission rate. Therefore, the applicants submit that Jacobs, as cited by the Examiner, teaches that pitch filter and codebook excitation parameters are updated for a new frame rate regardless whether the previous frame rate was determined to be incorrect or not, only the number of parameter updates per frame changes from one rate to the next.

Independent claim 9 recites (emphasis added) "updating the speech decoder filter state **based on the error determination** to produce an updated speech decoder filter state." The applicants submit that the teaching of Jacobs, as cited by the Examiner, suggests that an updated speech decoder filter state (assuming for the purpose of argument that the pitch filter and codebook excitation parameters of Jacobs represent speech decoder filter states) always be produced for the next data frame processed.

However, the updated speech decoder filter state is not based on any error determination nor is it used to decode a second frame, as claimed. Rather, the updated speech decoder filter state of Jacobs is produced in the process of decoding the second frame, not updated and then used for decoding.

Regarding claim 13, the applicants submit that it is not obvious to reset filter **states** on detection of a "bad" frame. In speech coding, known erasure mitigation techniques involve extrapulation and processing filters **using the previous state.** Again, Jacobs is detecting current bad frames and trying to minimize disruption to the filter state when processing the current frame by modifying the current frame before processing. In contrast, our disclosure involves detecting that a previous frame was handled incorrectly. Therefore, in our disclosure we determine that the filter state prior to the processing of the current frame is corrupted and thus reset it.

The Examiner appears to be interpreting "resetting" in claim 13 in such a way as to have the same meaning as "updating" in claim 9. Such an interpretation leaves claims 9 and 13 having identical scope and, therefore, cannot be a valid interpretation.

Since none of the references cited, either independently or in combination, teach all of the limitations of base claim 9, or therefore, all the limitations of its respective dependent claims, the applicants assert that neither anticipation nor a prima facie case for obviousness has been shown. No remaining grounds for rejection or objection being given, the applicant now respectfully submits that the claims in their present form are patentable over the prior art of record, and are in condition for allowance. As a result, allowance and issuance of this case is earnestly solicited.

The Examiner is invited to contact the undersigned, if such communication would advance the prosecution of the present application. Lastly, please charge any additional fees (including extension of time fees) or credit overpayment to Deposit Account No. **502117 – Motorola, Inc.**

Respectfully submitted,
L. Proctor et al.

By: _____

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